

AMENDMENTS TO THE DRAWINGS:

The attached sheets of drawings includes changes to Figs. 5, 6, and 7. These sheets, which include Figs. 4 - 7, replaces the original sheets including Figs. 4 - 7. In Figs. 5-7, the "Prior Art" legend has been added.

REMARKS

Applicants submit a petition and fee for a one-month extension of time.

Applicants submit an excess claim fee payment letter for one (1) additional total claim.

Claims 1-21 are all the claims presently pending in the application. The specification, drawings, and claims 1-7 are amended to more clearly define the invention and claims 8-21 are added. Claims 1, 10, and 16 are independent.

These amendments are made only to more particularly point out the invention for the Examiner and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Applicants note that, notwithstanding any claim amendments herein or later during prosecution, Applicants' intent is to encompass equivalents of all claim elements.

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Miura reference. Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the Miura reference.

These rejections are respectfully traversed in the following discussion.

I. THE INFORMATION DISCLOSURE STATEMENT

The Examiner noted the citation of JP-B-2-56528 at page 2, line 1 of the specification and that an information disclosure statement had yet to be filed to require the Examiner to consider this reference.

This Amendment accompanies an Information Disclosure Statement that submits the

reference. Applicants thank the Examiner and respectfully requests that the Examiner consider the reference and indicate consideration by initialing the Form PTO-1449 that accompanies the Information Disclosure Statement.

II. THE CLAIMED INVENTION

A first exemplary embodiment of the claimed invention as defined by, for example, independent claim 1, is directed to a one-way clutch that includes an outer ring fitting member including a hole, in which a recess portion is formed at an inner peripheral face of the hole, a shaft passing through the hole of the outer ring fitting member, an annular outer ring including a plurality of cam faces on an inner peripheral face thereof, which is fitted into the hole of the outer ring fitting member and through which the shaft passes, a plurality of rollers between the shaft and the annular outer ring so as to correspond to the plurality of cam faces, respectively; and an annular retainer for retaining the plurality of rollers fitted to the outer ring. The annular retainer includes an axially projected portion projected from the outer ring in an axial direction thereof, and a projection projected from the axial projected portion in a radial direction of thereof, which is fitted to the recess portion of the outer ring fitting member to prevent the retainer from rotating with respect to the outer ring fitting member.

A second exemplary embodiment of the present invention as defined by, for example, independent claim 10, is directed to a one-way clutch that includes a housing including a hole with a recess in an inner peripheral surface of the hole, an outer ring in the hole of the housing, a plurality of rollers within an inner peripheral surface of the outer ring, an annular retainer within

an inner peripheral surface of the outer ring and a shaft extending through the annular retainer. The annular retainer includes a projected portion projecting axially out of the outer ring, and a projection engaging the recess of the housing to prevent the retainer from rotating with respect to the housing.

A third exemplary embodiment of the present invention as defined by, for example, independent claim 16, is directed to a one-way clutch that includes a housing including a hole with a recess having an axially and radially extending surface in an inner peripheral surface of the hole, an outer ring in the hole of the housing, a plurality of rollers within an inner peripheral surface of the outer ring, an annular retainer within an inner peripheral surface of the outer ring. The annular retainer includes a projected portion projecting axially out of the outer ring, and a projection having an axially and radially extending surface that abuts the axially and radially extending surface of the recess of the housing.

As explained by the present specification at, for example, page 3, line 6 through page 4, line 11, and as illustrated by Figures 5-7, conventional one-way clutches have a problem in that when a shaft 53 is rotated in an idling direction (F) a roller 52 pushes against a retainer and may cause the retainer to rotate within the outer ring 51 (as shown in Fig. 6). Then, when the shaft 53 rotates in the opposite, locking direction (L), the roller 52 is stopped by the shifted retainer 43 before the roller 52 may move into a locking position through engagement with a cam surface 51b of the outer ring 51 (as shown in Fig. 7). Therefore, these conventional one-way clutches have difficulty in reliably obtaining a locking action.

In stark contrast, the present invention provides a structure that prevents the retainer from

rotating relative to the outer ring fitting member that holds the outer ring. Thus, since the retainer is prevented from rotating, the rollers will reliably engage the cam surface of the outer ring to lock the clutch.

III. THE 35 U.S.C. § 112, SECOND PARAGRAPH REJECTION

The Examiner alleges that claims 5-6 are indefinite. While Applicants submit that such would be clear to one of ordinary skill in the art taking the present Application as a whole, to speed prosecution claims 5-6 have been amended in accordance with Examiner Bonck's very helpful suggestions.

In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

IV. THE PRIOR ART REJECTIONS

Regarding claims 1-5, the Examiner alleges that the Miura reference teaches the claimed invention and that, regarding claims 6-7, the claimed invention is not patentable in view of the Miura reference. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by the Miura reference.

The Miura reference does not teach or suggest the features of the claimed invention including: 1) a projection projected from an axial projected portion in a radial direction of an annular retainer, which is fitted to the recess portion of the outer ring fitting member to prevent the retainer from rotating with respect to the outer ring fitting member (claim 1); a projection

engaging a recess of a housing to prevent the retainer from rotating with respect to the housing (claim 10); and a housing including a hole with a recess having an axially and radially extending surface in an inner peripheral surface of the hole and an annular retainer including a projection having an axially and radially extending surface that abuts the axially and radially extending surface of the recess of the housing (claim 16). As explained above, this feature is important for preventing the annular retainer from rotating relative to housing and to, thereby, reliably ensure a locked condition.

In stark contrast, the one-way clutch that is disclosed by the Miura reference does not include these features. In particular, while the cage member 13 (what the Examiner attempts to analogize to the claimed “annular retainer”) includes a peripheral coupling rib 33 that engages a peripheral groove 27 within the outer member 11, this structure does not prevent the cage member from rotating relative to the outer member.

Rather, the engagement of the peripheral coupling rib 33 of the cage member 13 with the peripheral groove 27 of the outer member 11 merely provides for easy assembly and is designed to “interlock the clutch 10 in an assembled condition.” (Col. 4, lines 47 - 65).

Clearly, the peripheral coupling rib 33 does not prevent the cage member 13 from rotating within the outer member 11. Indeed, the one-way clutch clearly suffers from the same problem that is solved by the present invention.

It is plainly evident that the cage member 13 may rotate relative to the outer member 11 while the grooves 28 and longitudinal ribs 21 prevent the ring cage 12 from rotating relative to the outer member 11. Therefore, the columns 34 on the cage member 13 may rotate relative to

the ring cage 12 and prevent the one-way clutch from reliably locking.

Similarly, the Miura reference discloses another exemplary embodiment where the outer member 41 includes flexible arms 48 that extend through openings 57 in the cage member 42. This structure allows for easy assembly and functions to snap lock the clutch into an assembled condition (col. 5, lines 30-41).

While this structure might limit the amount of rotation of the cage member 42 relative to the outer member 41, the Miura reference does not teach or suggest that this structure prevents such relative rotation. In other words, there is no discussion or explanation as to the gaps between the axially and radially extending surfaces of the flexible arms with respect to the openings 57 such that these surfaces abut each other to prevent any rotation at all.

As explained above, in order to provide for a reliable locking actuation there must be no rotation at all between the outer member 41 and the cage member 42.

Thus, the one-way clutch that is disclosed by the Miura reference does not teach or suggest the claimed features of the present invention and, indeed, suffers from the same problems that are solved by the present invention.

Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejections of claims 1-7.

V. FORMAL MATTERS AND CONCLUSION

The Office Action objects to the drawings. This Amendment encloses replacement drawing sheets which correct Figures 5 - 7 to include the legend "Prior Art." Applicants

respectfully request withdrawal of this objection.

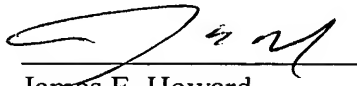
In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1-21, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 11/09/07


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